

WHAT IS CLAIMED IS:

1. A method for manufacturing a shadow mask assembly in which a shadow mask that has an approximately rectangular sheet-like shape and a perforation region provided with a number of through holes is fastened to a support frame that has an approximately rectangular frame-like shape in a tensioned state of the shadow mask, the method comprising:

applying a preliminary tension force of an strength of 9.8 to 490 N to each of four corners of the shadow mask outwardly aslant with respect to a side of the shadow mask;

applying a main tension force to each of at least a pair of mutually opposite sides of the shadow mask outwardly perpendicularly to the sides after the preliminary tension force is applied thereto; and

fastening the shadow mask to which the main tension force has been applied after applying the main tension forces to frame sides of the support frame.

2. A shadow mask assembly manufacturing method as claimed in claim 1, which further comprises:

applying before the shadow mask is fastened compression forces in directions in which a gap between the frame sides is narrowed to a pair of mutually opposite frame sides that belong to the frame sides of the support frame and correspond to the sides of the shadow mask to which the

main tension force is applied, and wherein

the shadow mask is fastened to the frame sides of the support frame in the state in which the compression force has been applied wherein the shadow mask is fastened.

5 3. A shadow mask assembly manufacturing method as claimed in claim 1, wherein

the direction in which the preliminary tension force is applied when the preliminary tension force is applied is a direction within a plane of extension in which
10 a plane of the shadow mask is extended from an end portion outwardly in a tangential direction and is inclined at an angle of 15 to 45 degrees with respect to the sides to which the main tension force is applied when the main tension force is applied.

15 4. A shadow mask assembly manufacturing method as claimed in claim 1, wherein

when the preliminary tension forces are applied, the preliminary tension forces are applied by clamping the four corners of the shadow mask within a range surrounded by
20 both sides and extension lines of outer peripheral sides of the perforation region.

5. A shadow mask assembly manufacturing method as claimed in claim 1, wherein

when the preliminary tension forces are applied,
25 the preliminary tension forces are applied by forming at the

four corners of the shadow mask three to eight through engagement holes of a diameter of 3 to 8 mm within a range of not smaller than 3 mm inside a side end of the shorter side to an extension line of a corresponding peripheral side of the perforation region and within a range of a side end of the longer side to an extension line of a corresponding peripheral side of the perforation region and making an engagement member engage with the engagement holes.

6. A shadow mask assembly manufacturing method as claimed in claim 1, wherein when the main tension forces are applied, each of the main tension forces is applied to a portion of a range of the perforation range of the sides of the shadow mask.

7. A cathode ray tube manufacturing method for manufacturing a cathode ray tube provided with a flared tube body, an electron gun attached to a root portion of the tube body, and a front panel that has a fluorescent surface on its internal surface and is attached to a fore end of the tube body, the method comprising:

manufacturing the shadow mask assembly by the method claimed in claim 1;

attaching the shadow mask assembly to the inside of the front panel; and

attaching to the tube body the front panel to which the shadow mask assembly has been attached.